

CLAIMS

1. A device for detecting the pressure in a combustion chamber of an internal combustion engine,
5 comprising:

- a functional member (1, 10, 30) used in the operation of the engine, the functional member passing through the wall of a cylinder head (5) inside an orifice (3) having an axis (11) and formed in this
10 wall, the functional member communicating via this orifice with a combustion chamber (9) of the engine and being intended to be mechanically linked to the cylinder head, with this functional member being able to move axially with respect to the cylinder head under
15 the effect of the pressure in the combustion chamber,

- and a sensor (19, 45, 79) sensing the combustion pressure in this chamber, the sensor being axially pressed against a part (1b, 25, 41) linked to the functional member, via a bearing surface (17, 47, 73);
20 fixed in terms of position with respect to the cylinder head, independently of the pressure in the combustion chamber, so that the sensor detects the displacement of the functional member upon variations in the pressure in the combustion chamber,

25 characterized in that:

- a mechanical link between the functional member (1, 10, 30) and the cylinder head (5) is achieved by way of an additional means (15, 17, 43, 47, 73) linked fixedly to this cylinder head,

30 - and at least part (17, 47, 73) of this additional means exerts pressure on the sensor (19, 45, 79) thereby defining said bearing surface that is fixed in terms of position with respect to the cylinder head when the functional member which is mounted on the
35 cylinder head (5) is in an operational state ready to be subjected to the pressure in the combustion chamber.

2. The device as claimed in claim 1, characterized in that:

- part (1a) of the exterior periphery of the functional member intended to come immediately to face the wall of the orifice in the cylinder head (5) is mounted freely inside this orifice (3), having no means of attachment engaging the wall of this orifice, and
5 - the additional means comprises a collar (15, 43) linked fixedly to the cylinder head and a nut (17, 47) screwed onto a screw thread of the collar, the nut keeping the sensor and a shoulder (1b, 25, 41) of the functional member pressed axially between it and a
10 shoulder (15c) of the collar.

3. The device as claimed in claim 1, characterized in that the additional means comprises:

15 - a collar (15, 45) structurally independent of the cylinder head, the collar having a first region (15a) for mechanical attachment intended to enter the orifice (3) and comprising first attachment means suited to engaging with second attachment means (3a) formed in
20 the wall of the orifice (3) in the cylinder head, so as to attach the collar to this cylinder head, in the orifice, and a second region of attachment (16) located some distance from the orifice and having third means of attachment for a mechanical link between the
25 functional member (1, 10) and the collar,
- and a pressing and attachment member (17, 47) comprising fourth means of attachment designed to engage with the third means of attachment, so as to exert axial pressure on the sensor (13, 45)
30 independently of the combustion pressure and so as to mechanically link the functional member to the collar, part (1a) of the exterior periphery of this functional member intended to come immediately to face the wall of the orifice (3) in the cylinder head being mounted
35 freely inside this orifice, having no means of attachment engaging with the wall of this orifice.

4. The device as claimed in claim 3, characterized in that:

- the exterior periphery of the functional member locally has a shoulder (1b, 25, 41) defining said part linked to the functional member, and

- the sensor (13, 45) is interposed between a
5 shoulder (15c) of the collar and the attachment and pressing member (17, 47).

5. The device in any one of claims 2 and 4, characterized in that the collar comprises a hollow
10 cylindrical component having a first part (15a) of a first diameter to be placed inside the orifice and a second part (15b) of a second diameter located outside the orifice, axially at the opposite end to the combustion chamber (9), this second diameter being
15 greater than the first diameter, the second part thus having an interior volume designed to accommodate the shoulder of the functional member (1, 10) and the sensor (13, 45) which has an annular shape locally surrounding an exterior surface of the functional
20 member.

6. The device as claimed in claim 1, characterized in that:

- the additional means comprises a collar (73) fixed
25 to the cylinder head outside the orifice, the collar locally defining said bearing surface fixed in terms of position with respect to the cylinder head,

- part of the exterior periphery of the functional member (30) which part is intended to come immediately
30 to face the wall of the orifice (3) in the cylinder head is mounted freely inside this orifice, having no means of attachment engaging with the wall of this orifice, and

- the sensor (79) is interposed between said bearing
35 surface of the collar and a shoulder (71) linked fixedly to the functional member, so that the displacement of the functional member with respect to the cylinder head under the effect of the pressure in the combustion chamber causes a variation in pressure

on the sensor.